Menglin Zou

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Education Background

The University of Auckland Auckland, New Zealand

Master of Artificial Intelligence |GPA: 7.75/9.0 *Jul. 2023 – present*

- Core Courses: AI Architecture and Design (A), Deep Learning (A), Natural Language Processing (A)

Southwest University Chongqing, China

Bachelor of Computer Science |GPA: 75/100 *Sep. 2020 – Jun. 2023*

- Core Courses: Data Structures, Computer Organization, Operating Systems, Computer Networks

Publications

PIRO: Toward Stable Reward Learning for Inverse RL via Monotonic Policy Divergence Reduction
Yang Chen, Menglin Zou, Jiaqi Zhang, Yitan Zhang, Junyi Yang, Gael Gendron, Libo Zhang, Jiamou Liu, Michael J. Witbrock
Under Submission to NeurIPS 2025.

Projects

Facial Recognition | *Python, Flask, YOLOv3, YOLOv5* May 2023 – Jul. 2023

- Developed a facial recognition system using YOLOv3 and YOLOv5 for accurate and efficient face detection and recognition.
- Implemented and optimized algorithms to enhance the performance of face detection in various environments.
- Conducted experiments and data analysis to improve the accuracy and reliability of the system.
- Integrated the facial recognition system into existing platforms, ensuring seamless functionality.

Nutritional Meal Recommendation System | *Python, DSSM* Dec. 2023 – May 2024

- Developed a nutritional meal recommendation system based on multi-model fusion technology.
- Utilized Python, Pandas, and NumPy to process nutritional information from a food database.
- Implemented DSSM to provide personalized dietary recommendations and combined nutrition science with user preferences to offer customized and balanced meal plans.
- Enhanced recommendation accuracy and efficiency through the integration of multi-model fusion technology.

Preventing Dormant Neurons in Deep Reinforcement Learning | *Python, PyTorch* Jul. 2024 – Oct. 2024

- Developed the Proactive-Reactive Neuron Activation (PRNA) method to mitigate the dormant neuron problem in deep reinforcement learning.
- Optimized key parameters such as regularization strength and weight thresholds for the Dormant Neuron Activation Regularization (DNAR) method.
- Introduced an enhanced ReDo algorithm based on He initialization to reactivate dormant neurons effectively.
- Conducted experiments in the Atari Pong environment, comparing PRNA with baseline methods like ReDo and Weight Decay, demonstrating superior performance in reducing dormant neurons and maintaining network stability.

Apple Leaf Disease Classification | *Python, TensorFlow, Keras* Apr. 2024 – Jun. 2024

- Participated in the Plant Pathology 2020 Challenge to develop a computer vision model for apple leaf disease classification.
- Conducted hyperparameter tuning using grid search and automated optimization for parameters like learning rate, batch size, and regularization.
- Designed strategies for handling rare and novel disease classes, utilizing data augmentation and class balancing techniques to improve recognition accuracy.
- Analyzed model performance under varying lighting conditions, leaf angles, and physiological ages to refine classification accuracy.

Emotion-Aware Chatbot Robot | *Python, PyTorch* Mar. 2025 – May 2025

- Designed an intelligent emotion-aware robot that detects facial emotions using HaarCascade and classifies them with ViT.
- Integrated the detected emotion into real-time response generation using a GPT-based language model.
- Built a pipeline combining computer vision, emotion classification, and natural language processing for interactive human-robot communication.

Experience

Undergraduate Research Assistant Jun. 2021 – Nov. 2021
Southwest University *Chongqing, China*

- Developed a company website for a health and wellness community using modern web technologies
- Planned and coordinated project workflow to ensure efficient and timely completion of the website
- Implemented features to facilitate user interaction and engagement within the wellness community

Innovation and Entrepreneurship Project Feb. 2021 – Jul. 2022
Southwestern University *Chongqing, China*

- Initiated a project focused on innovative soy-based food products, aiming to promote health and wellness through diet
- Gradually expanded the project into a comprehensive one-stop health and wellness community platform
- Conducted extensive market research and user surveys to adapt the platform to the evolving needs of the community
- Wrote multiple project reports and conducted presentations both on-campus and off-campus
- Received praise from expert judges and won multiple innovation and entrepreneurship awards

Deep Learning Engineer Intern May 2023 – Jul. 2023
iFLYTEK *Chongqing, China*

- Developed a computer vision project focused on a facial recognition system.
- Implemented and optimized algorithms for accurate and efficient face detection and recognition.
- Conducted experiments and analyzed data to improve system performance and reliability
- Collaborated with team members to integrate the facial recognition system into existing platforms

Graduate Teaching Assistant – COMPSCI 120 Mar. 2025 – Jun. 2025
The University of Auckland *Auckland, New Zealand*

- Assisted in delivering tutorials for "Mathematics for Computer Science," focusing on logic, sets, proofs, and combinatorics.
- Explained selected exercises and theoretical concepts to first-year students in an accessible and engaging way.
- Provided individual support during tutorial sessions and responded to student questions on Canvas and Ed Discussion.

Skills

Languages: Python,Java, C/C++, SQL ,R, JavaScript, HTML/CSS
Soft Skills: Business communication, Project management, Data visualization, PowerPoint Presentation, Team Leadership
Developer Tools: Git, Google Cloud Platform, VS Code, Visual Studio, PyCharm, Eclipse